

Figure 1

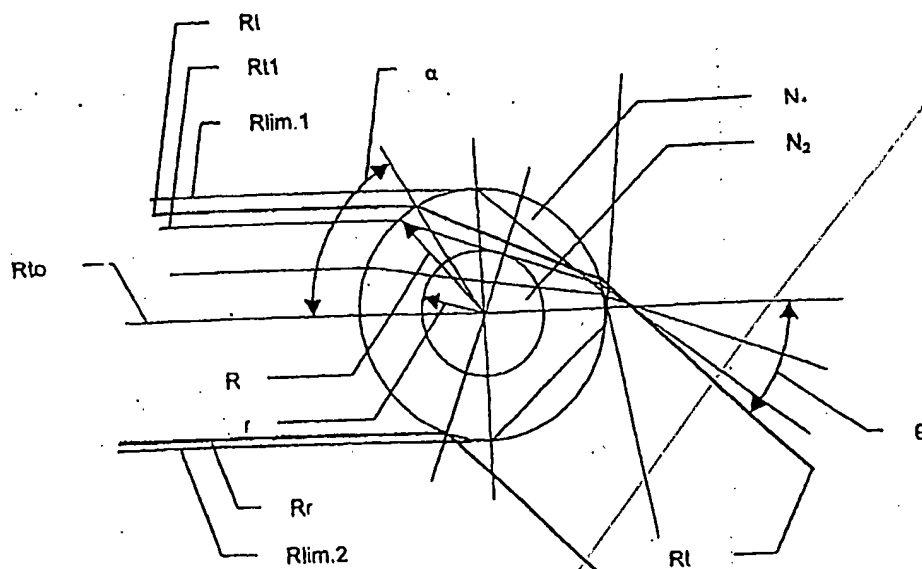
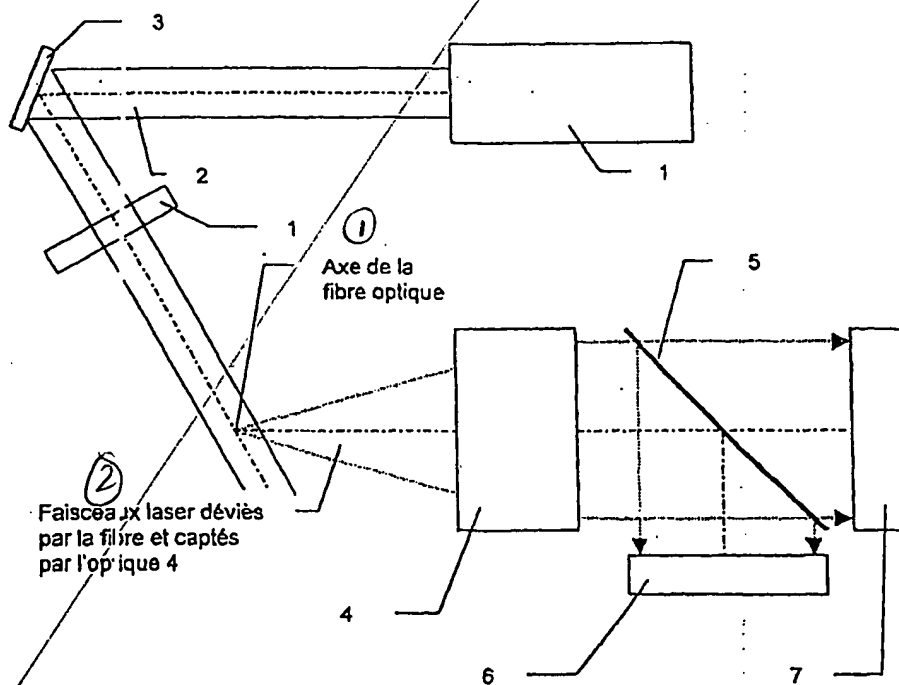


Figure 2



Keys: 1) Optical fiber axis; 2) Laser bundles deflected by the fiber and sensed by the optic 4

Normal signal for a 125  $\mu\text{m}$  glass fiber

Figure 3

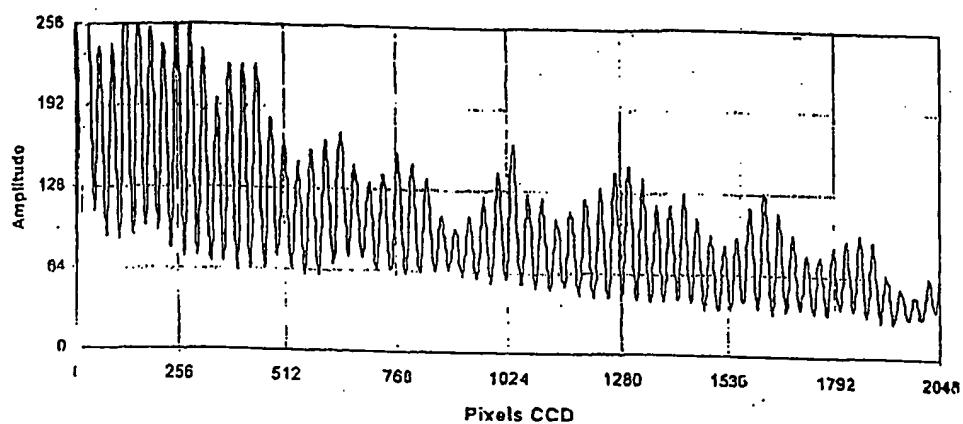
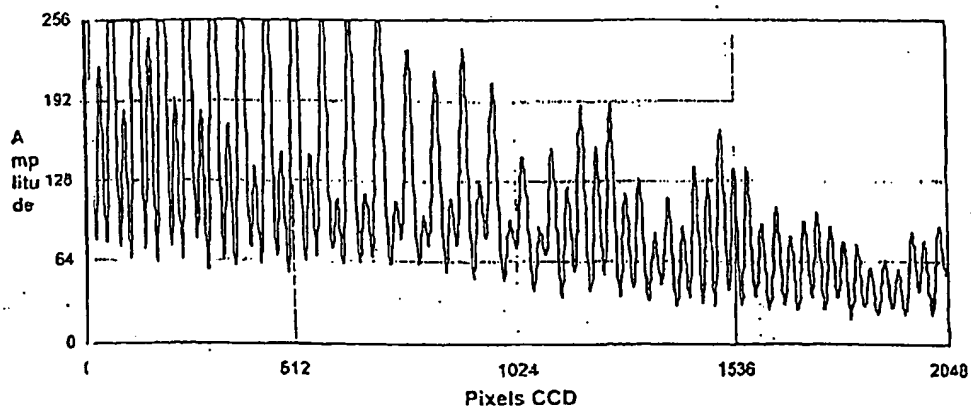
Figure 4 Signal from an uncoated 125  $\mu\text{m}$  fiber with 4.8  $\mu\text{m}$  "air-line" in the center

Figure 5

Disturbance signal

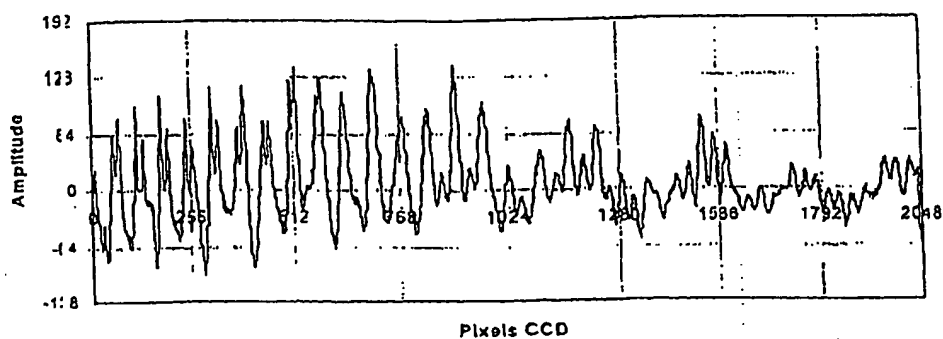
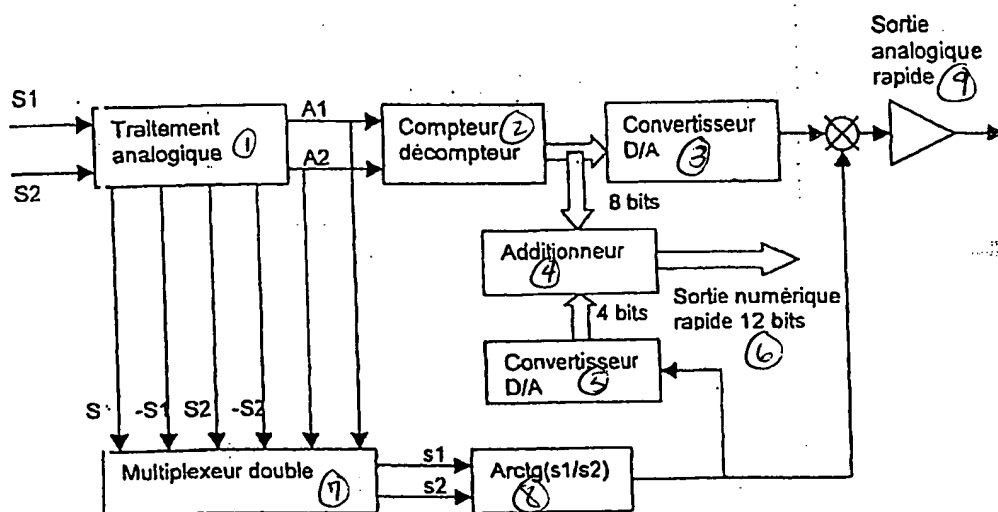
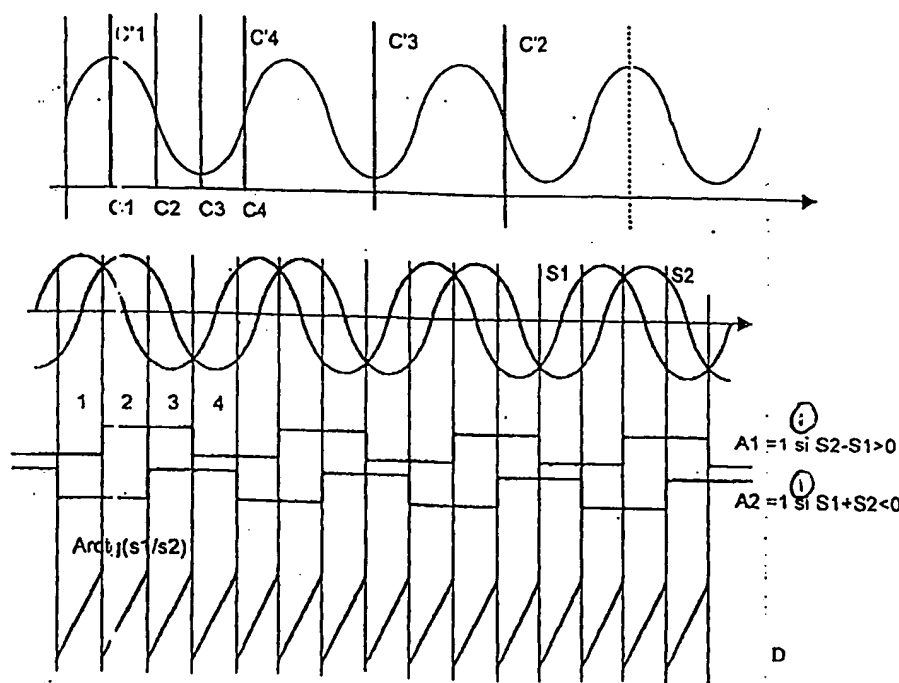


Figure 6



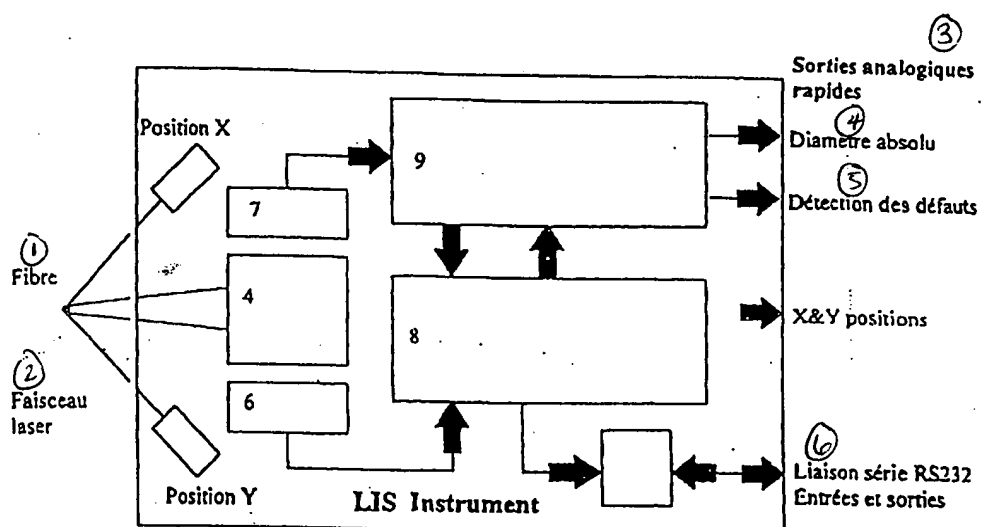
Keys: 1) Analog processing; 2) Counter; 3) D/A converter; 4) Adder; 5) D/A converter; 6) Rapid digital output 12 bits; 7) Double multiplexer; 8) Arctangent ( $s1/s2$ ); 9) Rapid analog output

Figure 7



Key- 1: if

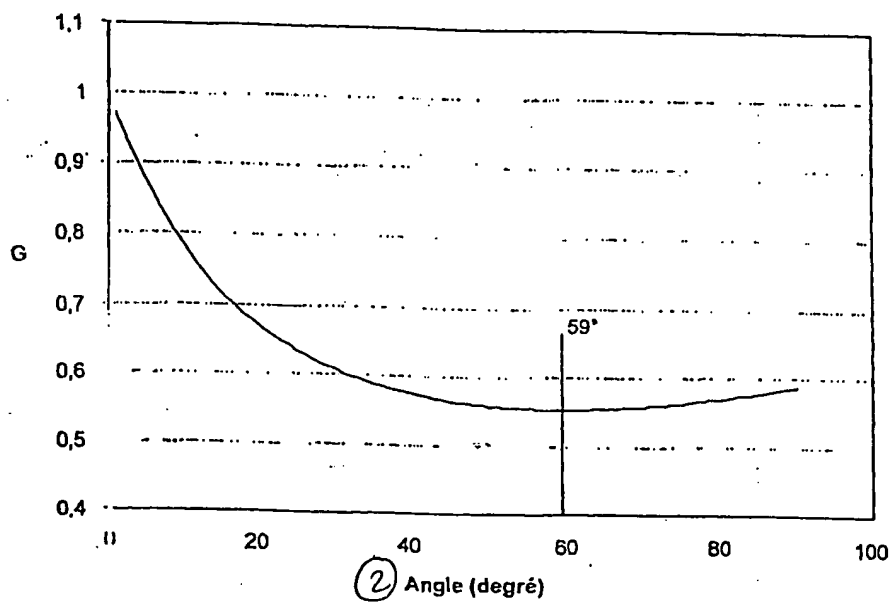
Figure 8



Keys: 1) Fiber; 2) Laser bundle; 3) Rapid analog outputs; 4) Absolute diameter; 5) Defect detection; 6) RS332 series input and output link

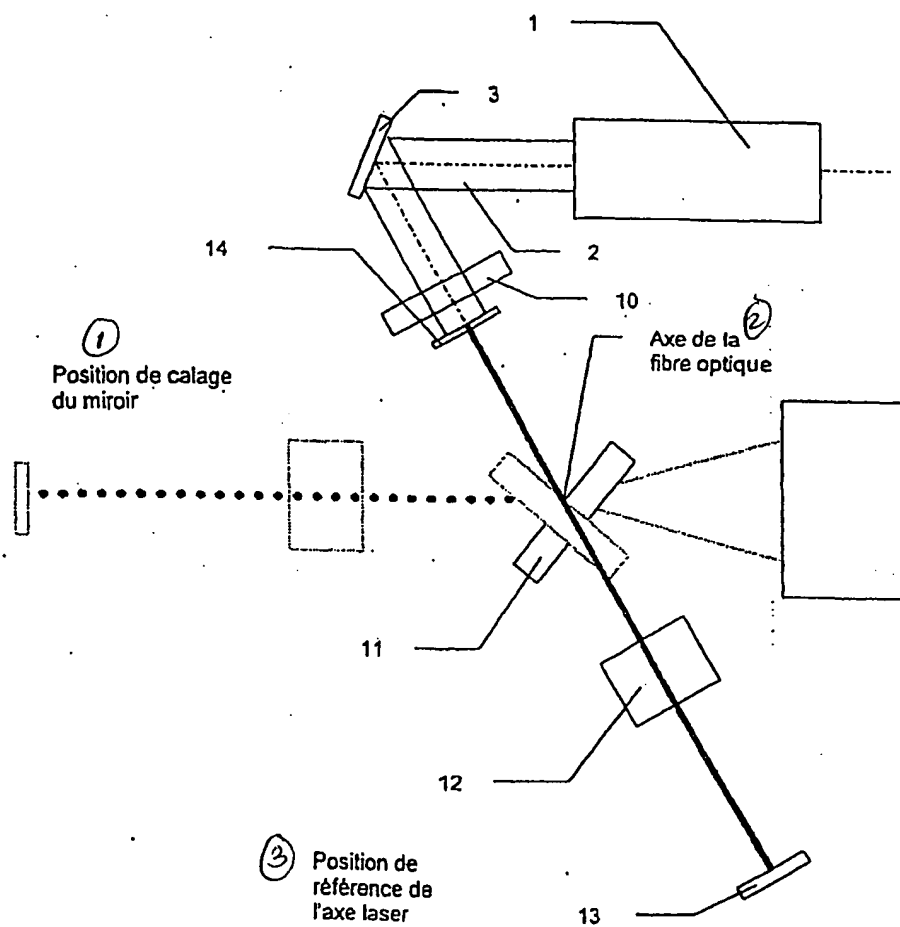
Figure 9

① Evolution de la période



Keys: 1) Period evolution; 2) Angle (degree)

Figure 10



Keys: 1) Mirror clamping position; 2) Optical fiber axis; 3) Laser axis reference position